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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,249	05/23/2006	Hidetsugu Ikeda	290850US0PCT	2018
22850	7590	04/29/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CLARK, GREGORY D	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			04/29/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/580,249	Applicant(s) IKEDA ET AL.	
	Examiner GREGORY CLARK	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 4-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/23/2006, 11/14/2006, 12/03/2007, 01/14/2008</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

The examiner acknowledges receiving the response to the restriction requirement dated 2/20/2009. Applicants elected the following distinct species without traverse:

- (1) Group A is elected for R1, R3-R6, R8 and R9 and R11-R13; and
- (2) Group E is elected for R2, R7 and R10, R14.

Claims 1-7 read on the elected species.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

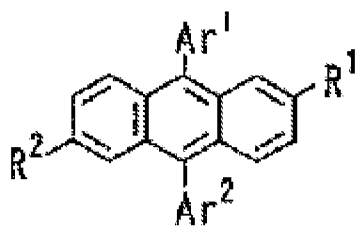
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. **Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by ICHINOSAWA (JP2003-146951).**

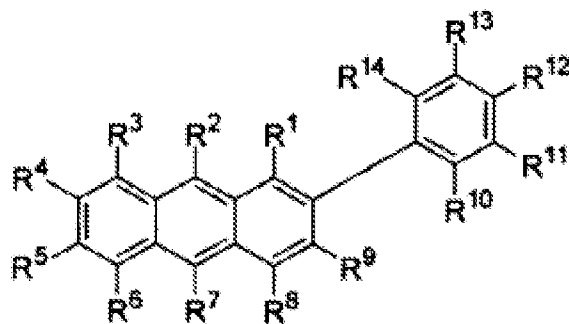
3. **Regarding Claims 1-2,** ICHINOSAWA discloses a compound represented by the following generic formula (1):

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Formula (1)

The applicant claims the generic structure of formula (2) shown below:



Formula (2)

The structure of formula (1) taught by ICHINOSAWA reads on the generic structure formula (2).

Where the applicant claims R1-R14 can be a hydrogen atom, ICHINOSAWA teaches a hydrogen atom in R1, R3, R4, R6, R8 and R9 positions.

Where the applicant claims the positions located between the R1 and R9 along with the R5 position can be a substituted or unsubstituted alkenyl group having 1 to 40 carbons or a substituted or unsubstituted aryl group having 6 to 40 carbons atoms, ICHINOSAWA teaches these two positions are substituted with a 5- or 6-membered aromatic hydrocarbon ring (abstract). The generic formula (1) taught by ICHINOSAWA reads directly on the generic formula (1) claimed by the applicant (per claim 1).

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Where the applicant claims R2 or R7 can be a substituted or unsubstituted aryl group having 6 to 40 carbon atoms, ICHINOSAWA teaches a aryl group in the R2 or R7 positions (per claim 2).

4. **Regarding Claims 4 and 5**, ICHINOSAWA discloses that the structure of formula (1) is a material used in an organic electroluminescent device (abstract). The organic electroluminescent device has a light emitting layer (called a luminous layer by the applicant) between an anode and cathode (called a negative pole by ICHINOSAWA) (paragraph 97). The generic structure of formula (1) taught by ICHINOSAWA reads on the generic structure of formula (2) claimed by the applicant (as discussed above).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-5 (elected species) are rejected under 35 U.S.C. 103(a) as being unpatentable over ICHINOSAWA (JP2003-146951).**

7. **Regarding Claims 1-2**, ICHINOSAWA discloses a compound represented by a following general formula (1).

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ICHINOSAWA discloses that Ar¹ and Ar² are each independently 5- or 6-membered aromatic hydrocarbon ring (aryl group) (abstract). Groups R¹ and R² can be 5- or 6-membered aromatic hydrocarbon ring (abstract). The applicant claims an aromatic compound represented by the following general formula (2) shown below:

Formula (1) above disclosed by ICHINOSAWA differs from the elected species (Group A) of the applicants' general formula (2) (shown above) in that the applicants' elected to designate R⁵ as being a hydrogen substituent and ICHINOSAWA has designated R⁵ as a 5- or 6-membered aromatic hydrocarbon ring. Additionally the applicants' other elected species (Group E) has a diarylphenyl group in 2 position of the anthracene ring system and ICHINOSAWA discloses an unsubstituted phenyl group in the 2 position.

The examiner takes the position that the general formula disclosed by ICHINOSAWA represents merely one variation in which a skilled synthetic chemist could achieve by carrying out the appropriate organic reactions to attach the desired groups on positions on the aromatic rings. Where as ICHINOSAWA uses the materials based on formula (1) for the similar light emitting applications as the applicant uses the materials based on formula (2), a person of ordinary skill in the art at the time of the invention with the expectation of success would synthesize a host of materials with various aromatic substituents at different positions along the parent ring(s) system in order to achieve suitable light emitting properties which would include a hydrogen substituent at the R5 position and a diarylphenyl group in 2 position of the anthracene ring.

ICHINOSAWA discloses the parent ring(s) system of the applicants' formula (1) and the area of application claimed by the applicant. Variations in the substituent groups attached to the

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ring(s) system disclosed by the ICHINOSAWA are viewed obvious synthetic variants that would have similar properties, absent unexpected results.

8. **Regarding Claim 3**, ICHINOSAWA discloses that the materials based on formula (1) compound have been used to produce of an organic electroluminescent element excellent in heat resistance, having low driving voltage and high luminous efficiency. ICHINOSAWA fails to mention a luminescent solution containing the aromatic materials of formula (1).

The examiner takes the position that the compounds based on formula (1) disclosed by ICHINOSAWA are luminescent and it would have been obvious for a skilled artisan at the time of the invention to use a suitable solvent system to render such materials in solution.

9. **Regarding Claims 4 and 5**, ICHINOSAWA discloses that the structure of formula (1) is a material used in an organic electroluminescent device (abstract). The organic electroluminescent device has a light emitting layer (called a luminous layer by the applicant) between anode and cathode (called a negative pole by the applicant) (paragraph 97). The structure of formula (1) taught by ICHINOSAWA reads on the elected structure derived from formula (2) claimed by the applicant differs (as discussed above).

ICHINOSAWA discloses the parent ring(s) system of the applicants' formula (1) and the area of application claimed by the applicant. Variations in the substituent groups attached to the ring(s) system disclosed by the ICHINOSAWA are viewed obvious synthetic variants that would have similar properties, absent unexpected results.

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10. **Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over ICHINOSAWA (JP2003-146951) in view of Kawamura (6074734).**

11. **Regarding Claims 6 and 7, ICHINOSAWA fails to teach an organic electroluminescent device wherein the light emitting layer further contains an arylamine, a namely styrylamine compound.**

Kawamura discloses an organic luminescence device which containing an organic layer wherein the organic layer at least contains a layer of a light emitting zone and a layer of a hole transporting zone which comprises a hole injecting layer containing the triamine (abstract). Kawamura further discloses that the triamine compound can be represented by styrylamine compounds (column 21, lines 21-22). Kawamura further discloses that an organic electroluminescence device having a higher efficiency of light emission can be obtained by using a light emitting zone with a hole injecting layer containing a styrylamine compound (column 21, lines 54-55).

With a reasonable expectation of success, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the light emitting zone of ICHINOSAWA by adding a styrylamine compound taught by Kawamura since Kawamura discloses the incorporation of such materials into the light emitting zone of organic electroluminescent device promotes a higher efficiency of light emission (column 21, lines 54-55).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawamura (6,074,734) discloses an organic electroluminescent device containing styrylamine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY CLARK whose telephone number is (571)270-7087. The examiner can normally be reached on M-Th 7:00 AM to 5 PM Alternating Fri 7:30 AM to 4 PM and Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

GREGORY CLARK/GDC/
Examiner
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